

Minutes, Monsoon Software Meeting, 1:30 pm Feb 13, 2006

- 1) UIUC-style installation of Monsoon, from DES CVS
 - third hand report, Barcelona was able to succeed
 - FNAL has not succeeded so far, needs to capture error messages
- 2) UIUC monsoon operation
 - sees mostly (but not all!) channels zero in the FITS files
 - suggestion from Walter - signal into ADC outside its range (-4 -> +4 V)
 - suggestion from Terri - try shorting the video input; should give about midpoint of ADC range
 - Q. Where is range of ADC set? The hardware range of ADC is always the same.
- 3) Walter:
 - there is an operational problem maintaining consistent focal plane directories across the monsoon machines: suggestions to use Nick's configuration export script, or develop a procedure using cvs
 - need attribute windows in MEC to review csv files
 - other issues: expecting email from Walter
- 4) Terri: we are out-of-synch wrt Peter's description of the boards; poses a problem trying to program. Using Peter's beta version of the XML is meant to fix this problem - do that, or roll our own solution?

problem of getting calibration of the boards into monsoon

- new calibs from NOAO in pdf files
 - Inga's program would allow replacement of the constants in the csv file with the appropriate new constants; she pulls the new consts out of the excel spreadsheet (by hand). Terri notes that format of the spreadsheet has changed.
- 5) Terri: firmware updates - how to version? comes from NOAO as zip file.
 - need electronic logbook in lab - Liz will ask Suzanne about a DES installation, perhaps sharing the MINOS machine
 - Note added later: Liz has asked Suzanne, and the CRL is set up so that we could share one of the existing servers; we'll have to provide our own machine and web server, etc. [Could we use des01 or another SDSS cluster machine where apache is already supported?]
 - 6) Mike: modules file for the cvs repository. Need to ask Chris about this.

Here's the suggested job list from Wyatt, with some names attached.

- further work on installation procedure - Mike
- implementation of CCD test lab header -
- developing supervisory layer - Inga
- further development of MEC user interface
 - integrate DESMOND - Wyatt
 - integrate DB - Liz
 - Walter's list
- board calibration integration - Inga, ?Rick
- monsoon improvements
 - simulation mode
 - testing mode
 - multiple user mode
 - better diagnostics
- interface to Leach?

- substitution of S-Link?

In subsequent email, Mike expanded on the monsoon development jobs, for a dedicated developer to be named, as follows:

- 1) become co-owner of CVS.

The underlying issue is "how can we browse the repository?"

One answer could be the modules file.

Another answer could be to use something instead of CVS. Whatever the answer, implement it immediately.

- 2) examine Monsoon, and establish a DES "plan" for the use of CVS. What are the top level modules? One per institution? One per person? One for all of Monsoon (e.g. "soft_dev")? Or instead one for "cfg" and one for everything else? All of the above? None of the above?

How will future releases (from NOAO) be handled?

How will current changes in focal plane definitions (calibration files, .csv files, etc.) be handled?

This is not a trivial task, and doing it wrong could be painful for many people. But my guess is that a solid plan could be done in as little as one meeting.

- 3) implement the CVS plan.

Edit the modules file so the plan is visible.

On each machine that Walter uses, do the appropriate CVS checkout so he has his focal planes.

Teach Walter how to do CVS checkin (so he can make changes) and CVS update (to get the most recent versions).

- 4) implement an automatic CVS update process.

At present, the Monsoon software uses a script called FPSsetup to cause the focal plane to be linked, at runtime, so the MEC can find it; this called by runPAN, which is called by each of the focal plane execution scripts (ccdlab, generic, ...)

Two easy solutions: add a CVS update step into FPSsetup, or, introduce a "make" step into to focal plane execution scripts (see next item)

- 5) review the entire focal plane definition.

There are several files that need to be constructed: .ucd from .asm, .csv from calibration files, specialized linkages, ...

Consider using "make" as a construction tool for building focal planes. And part of the "make" process can be CVS update...

At this point, the software engineer will have a fair understanding of Walter's perspective on Monsoon, and will already have solved several key problems of day-to-day operation for DES.

- 6) install Monsoon on some non-DHE-gifted computer. Shake out installation issues, and incorporate that into the installation process.
- 7) understand the (three?) different NOAO definition of "simulation". Shake out one (either the sim library linkage, or the dead-DHE-default).

Don't make it work well. Just get it to not crash.

At this point, the software engineer will have a profound level of understanding of Monsoon, and be a valuable asset, worth preserving. Each of the above could be done by separate people, but no real understanding will be developed.

Also at this point, there will exist a workable testbed for future work. This would be of benefit to many people (SISPI, FITs files, MEC improvements, ...)

- 8) debug Juan's nightly crashes
- 9) tailor TCL to provide Walter with more information about .csv file loading
- 10) clean up simulation, to make it really work (as opposed to simply not crashing)
- 11) address the .LCK files which impedes multiple users

At this point, the software engineer will be in a position to address the truly difficult tasks:

- 12) rewrite the data handling system (DHS) libraries to handle files, servers, DCache, whatever from within Monsoon (as opposed to from the MEC)
- 13) rewrite the drivers to support SLink
- 14) understand and certify the detector library files (libDetCmds.so), so we really know what Monsoon is actually doing
- 15) develop diagnostic tools to assist in system testing

16) retask Monsoon to work with Leach hardware

At this point, the Monsoon-specific tasks for the software engineer should wind down, and the SISPI workload can ramp up...